

# **ARTC**

## **Alternative Routes to Certification**

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### **ANNUAL REPORT TO THE**

### **DELAWARE DEPARTMENT OF EDUCATION**

**2005 – 2006**

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# Annual Report to the Delaware Department of Education

## Alternative Routes to Certification

### June 2006

### Executive Summary

ARTC was designed to provide an accommodating path to teaching for high-quality individuals from other careers, to help Delaware secondary schools fill "critical needs," and to increase the pool of minority teachers. The program has made contributions in all of these areas. Between 1997-1998 and 2005-2006,

- almost 400 teachers were enrolled by all regular and vocational-technical school districts, 7 charter schools, and 5 district/state programs;
- almost one-third of ARTC teachers was hired to teach science; another one in three was hired to teach mathematics and business education;
- two-thirds of ARTC teachers came directly into teaching from other professions;
- one-third already possessed one or more graduate degrees in their subject areas; and
- one-quarter were minorities, twice the state average.

ARTC is also contributing significantly to recruitment of teachers in "critical needs" areas. Over the past five years, three-quarters of all candidates enrolled were recruited through the ARTC office, and a recent survey by Raffel & Prullelo (2004) indicates that 37% of districts make "great use" of information provided by the ARTC office as a recruitment tool.

ARTC is having a significant impact on the teacher supply in Delaware, and this impact is likely to increase in the future. In 2004-2005, at least 10% of all teachers in ARTC subjects, and almost half of all Delaware physics and earth science teachers, came through or were enrolled in the program. In that same year, half or more of the new hires in chemistry, earth science, business and technology education, and more than one in four new hires in physics, math, English, and biology were enrolled in ARTC.

Investments in ARTC teachers do have a lasting impact on Delaware schools. Like all Delaware teachers, ARTC teachers who leave their positions usually do so early on, but they appear to be somewhat less likely than other new teachers to leave in the first five years. Attrition is very low among those who finish the program. Of the 257 teachers who have thus far completed ARTC courses,

- 80% are still teachers or administrators in Delaware public or charter secondary schools;
- three-quarters are still teaching in Delaware public or charter schools after five or more years; and
- nine in ten have already been issued Standard Certificates in one or more content areas.

And according to their supervisors, ARTC graduates are performing very well in the classroom.

- 95% are performing as well or better than other teachers at similar points in their careers; and
- they are rated "strong" or "very strong" across a variety of specific domains of teaching.

**Recommendations.** At the state level, consideration should be given to (1) the level of funding required to sustain the current ARTC program; (2) increasing the level of financial aid available to candidates and/or better utilizing the funds currently available; (3) developing a state recruitment web site to explain certification requirements and procedures to prospective teachers and link them to information on state-approved certification programs; and (4) designating ARTC for school mentoring funds. At the program level, a plan needs to be developed that better supports recruitment in Kent and Sussex County districts, and that targets engineers and individuals in other science-related areas who are likely to qualify for particularly hard-to-fill positions.



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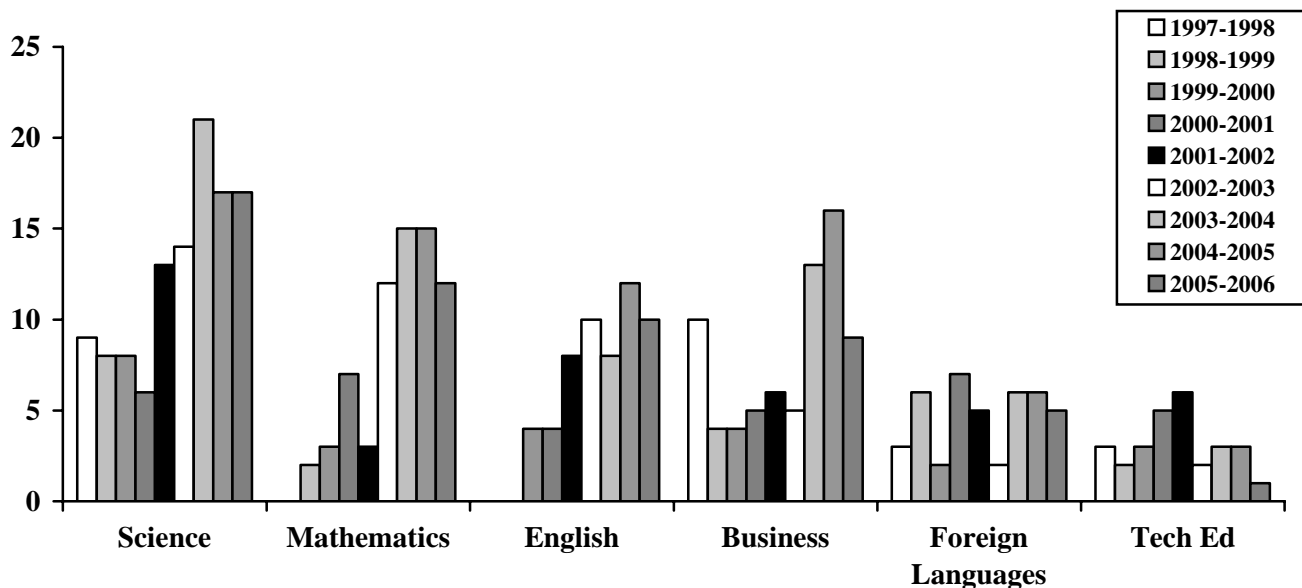
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## PART I. ARTC TEACHERS IN DELAWARE 2005 - 2006

This section assesses the impact of ARTC on teacher supply in Delaware, the recruitment and retention of ARTC teachers, and recommendations for the future. It relies heavily on data provided by Raffel & Prulello (Delaware Teacher Supply Survey Analysis Report July 2004, University of Delaware Institute for Public Policy Administration, 2004) and by Terry Anderson, Educational Research Associate at the Delaware Department of Education. Patterns of program participation and candidate demographics are addressed in Part II; program completion, retention and classroom performance are outlined in Part III.

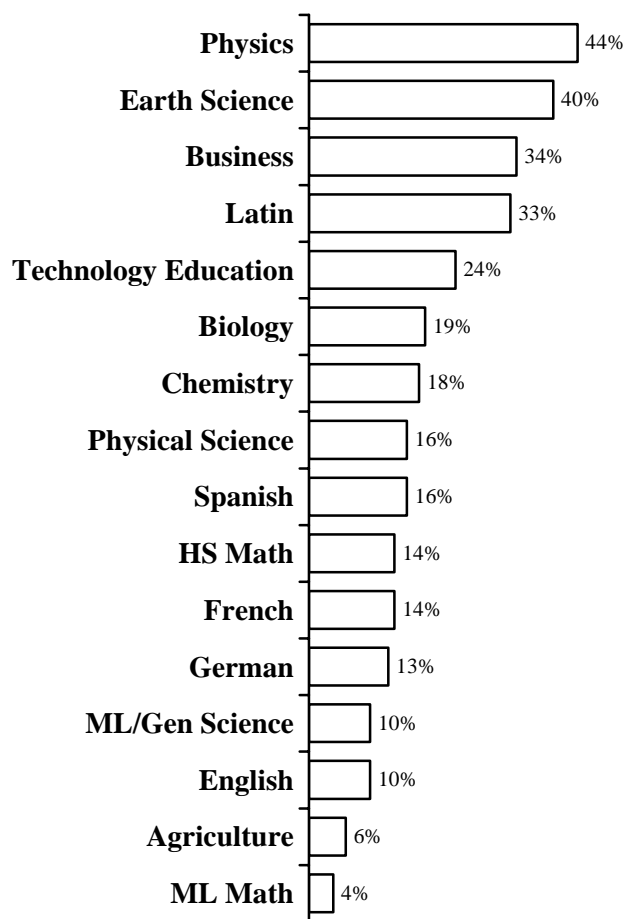
### ARTC’s Impact on Teacher Supply in Delaware

Raffel & Prulello (2004) report that districts anticipate ongoing difficulties recruiting teachers in “critical needs” subjects covered by ARTC, especially in mathematics, science and technology, and to a lesser degree in foreign languages and English. Recent ARTC enrollments confirm these needs and indicate that ARTC is helping address them: Almost half of all candidates enrolled in 2004 – 2005 and 2005 – 2006 were teaching mathematics or science (Figure I-1).



**Figure I-1.**  
**Enrollments by Cohort and Content Area**  
**1997 – 1998 to 2005 – 2006 Cohorts**

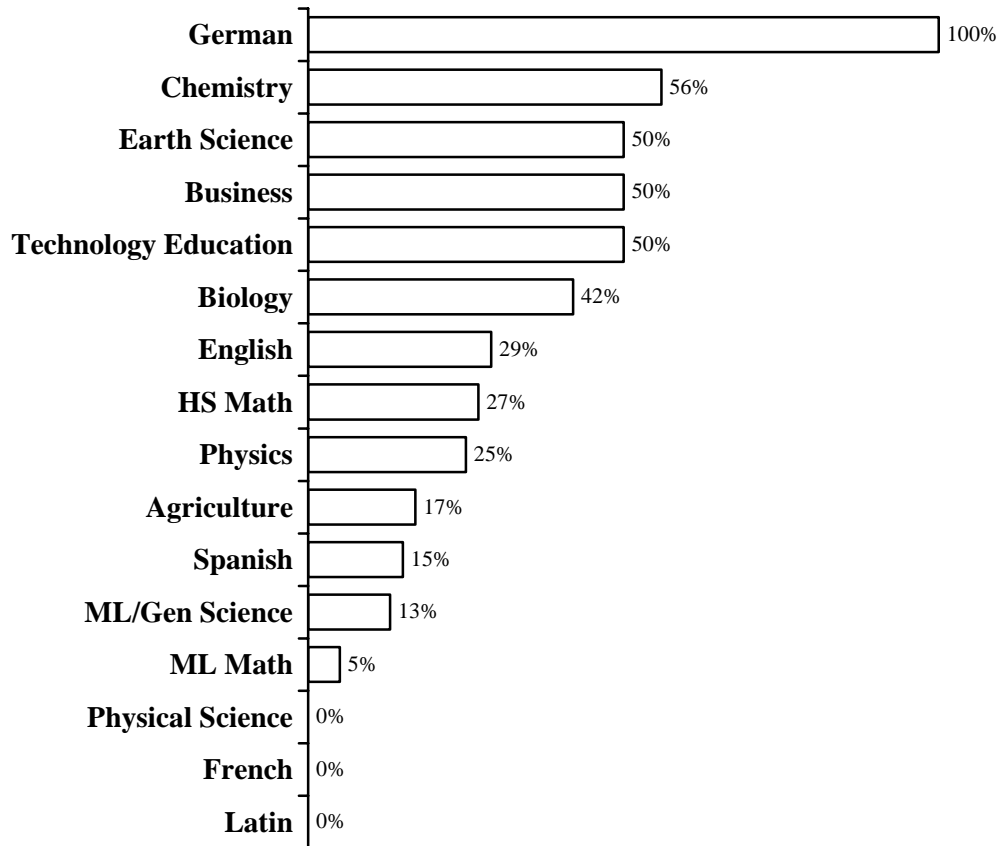
Department of Education data for the 2004 – 2005 school year (T. Anderson, May 2005) confirms that ARTC is having a substantial impact on teacher supply in “critical needs” subjects. Figure 1-2 indicates, by subject area, the percentage of all teachers in the 2004 – 2005 school year who entered or were entering teaching through ARTC. In that year, ARTC teachers comprised almost half of all physics and earth science teachers in Delaware, one-third of all business and Latin teachers and one-fourth of all technology education teachers. In all but two of the subjects covered by ARTC, at least 10% of the state’s teachers in 2004 – 2005 either came through or were enrolled in the ARTC program.



**Figure 1-2.**  
**Percent of ARTC Teachers Among All Delaware Teachers in 2004 – 2005 by Subject**

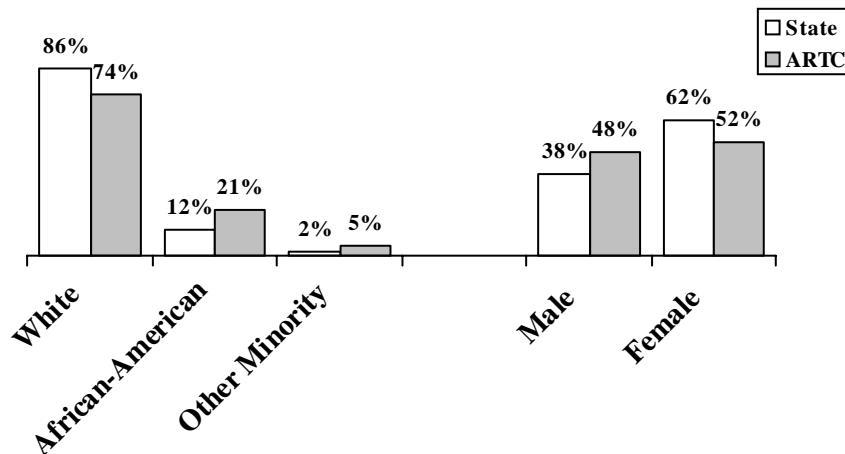
ARTC’s potential future impact on the teaching force in Delaware is even more apparent in the percentage of ARTC teachers among new hires in their subjects in 2004 – 2005 school year (Figure 1-3). In that year, districts turned to ARTC for

- half or more of all new teachers in chemistry, earth science, business and technology;
- one-quarter to one-half of all new teachers in biology, English, mathematics and physics; and
- all teachers in less-commonly-taught subjects like German.



**Figure 1-3.**  
**Percent of ARTC Teachers Among New Hires in 2004 – 2005 by Subject**

At the same time, ARTC is contributing to the diversity of the state’s teaching workforce: ARTC teachers include a larger proportion of males and minorities than Delaware teachers as a whole (Figure I-4, Part II and Appendix B).



**Figure I-4.**  
**State and ARTC Proportions of Teachers in Traditionally Underrepresented Groups**

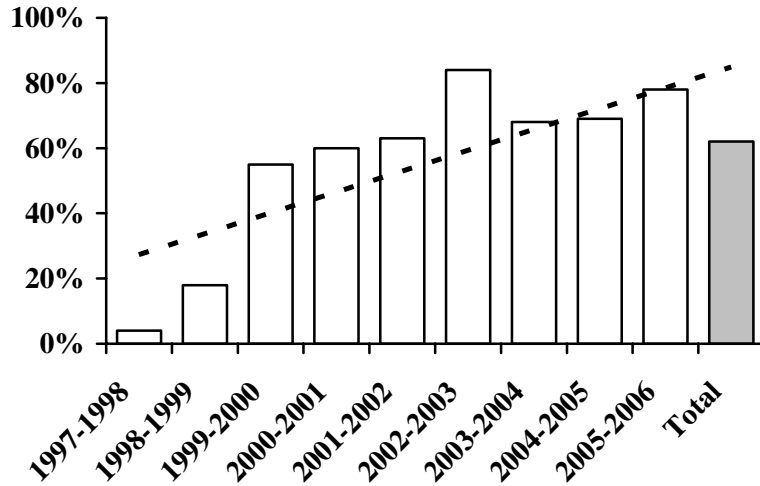
Finally, investments in ARTC teachers do have a lasting impact on Delaware schools. Of the 257 teachers who have thus far completed ARTC courses,

- 80% are still working as teachers or administrators in Delaware public or charter secondary schools; 83% are still working in Delaware schools;
- About three-quarters are still employed in target schools after five or more years (Part III and Appendices E and F).

Taken together, the data suggest that ARTC teachers already comprise a significant proportion of the state's teachers in their subject areas and that this proportion is likely to increase in the future.

### **ARTC's Role in Teacher Recruitment**

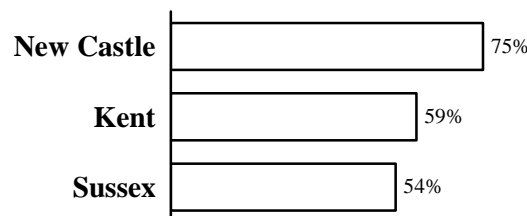
The ARTC program has also made significant contributions to recruiting teachers for hard-to-fill positions: Over the past five years, three-quarters of all candidates enrolled were recruited through ARTC (Figure I-5).



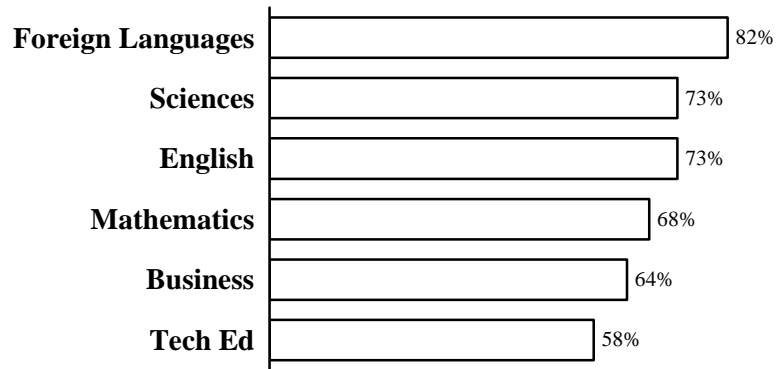
**Figure I-5.**  
**Proportion of Candidates Recruited Through ARTC by Cohort**

The ARTC office devotes a substantial and increasing amount of time to recruitment efforts. Each year, hundreds of individuals are counseled through the process of qualifying for the program, satisfying testing requirements, and finding a teaching position – or referred to other programs. This year the ARTC office also began evaluating transcripts and reviewed almost 200 candidates for program eligibility. Contact information for hundreds of individuals with degrees in "critical needs" content areas was forwarded to districts during the 2005 – 2006 school year alone.

Taken together, this suggests that while it was not initially envisioned as a major role of the ARTC program, recruitment has become a key program function for Delaware districts and schools. Raffel & Prullelo (2004) report that 37% of districts made “great use” of information on potential candidates disseminated by the ARTC office . As indicated in Figures I-6 and I-7, however, ARTC has been more helpful in identifying candidates in New Castle County than in Kent and Sussex Counties, and in some subjects rather than others.



**Figure I-6**  
**Percent of ARTC Teachers Recruited Through the ARTC Office & Website by County**



**Figure I-7**  
**Percent of ARTC Teachers Recruited Through the ARTC Office & Website by Subject**

### **Where Will We Find Future ARTC Teachers?**

If current patterns continue, and Delaware schools are likely to rely on ARTC teachers to fill a significant number of openings, where will we find appropriate candidates for these positions? To begin looking at this issue, a database was created of all current and former ARTC teachers whose college major is known. Table I-1 summarizes, by subject area, (1) the percent of ARTC teachers who qualified for their positions with a major in their subjects, and, where applicable, (2) the college major(s) of others who qualified to teach those subjects.

Some positions seem to be easily filled by those with a college major in the subject. Almost all English, foreign languages, agriculture, and chemistry positions are filled by individuals with degrees in their subjects; biology and business education are most often filled by those with majors in their subjects or in very closely related fields. On the other hand, filling positions in physics, earth science, mathematics and technology education seems to require casting a wider net. Engineering majors have been needed to fill a significant number of positions in physics (36%), mathematics (24%) and technology education (61%). Filling earth science positions has required tapping into a particularly diverse group of majors in geology, meteorology, plant and soil sciences, and environmental sciences.

Taken together, past experience indicates that, in addition to targeting those with college degrees in their subjects, recruitment efforts could be most productively directed at those with engineering degrees (particularly mechanical and electrical engineering) and those with degrees in disciplines that typically incorporate studies

across a range of sciences, like environmental, marine, and plant and soil sciences.

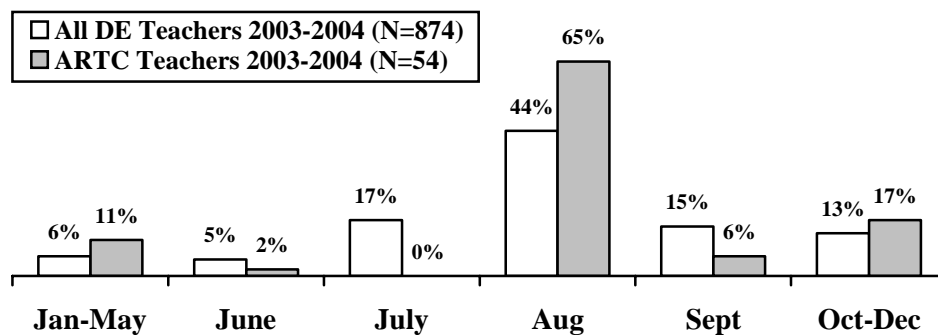
**Table I-1**  
**College Majors of ARTC Teachers By Subject**

<b>SUBJECT</b>	<b>BACHELOR'S DEGREE</b>	<b>N (Percent)</b>
<b>SCIENCES</b>		
<b>Biology</b>	<b>Biology Major</b> Related Degrees: Environmental Sciences, Wildlife Mgt, Marine Sciences, Plant & Soil Sciences Other: Psychology	<b>22 (76%)</b> 6 (21%) 1 ( 3%)
<b>Gen/ML Science</b>	<b>Biology or Chemistry Major</b> Related Degrees: Marine Biology, Plant Science, Applied Nutrition Other: Philosophy	<b>5 (50%)</b> 4 (40%) 1 (10%)
<b>Chemistry</b>	<b>Chemistry, Biochemistry or Chemical Engineering Major</b> Related Degrees: Biology	<b>16 (94%)</b> 1 (6%)
<b>Physics</b>	<b>Physics Major</b> Related: Engineering (Chemical, Electrical, Mechanical) Other: Environmental Sciences	<b>6 (55%)</b> 4 (36%) 1 ( 9%)
<b>Physical Science</b>	<b>Physics or Chemistry Major</b> Related Degrees: Environmental Sciences, Electrical Engineering	<b>3 (60%)</b> 2 (40%)
<b>Earth Science</b>	<b>Earth Science</b> Related Degrees: Environmental Sciences, Geology, Meteorology, Plant & Soil Sciences	<b>1 (12%)</b> 7 (88%)
<b>Agriculture</b>	<b>Agriculture, Animal Sci, Plant &amp; Soil Sci, Horticulture Major</b>	<b>6 (100%)</b>
<b>MATHEMATICS</b>	<b>Mathematics or Statistics Major or Minor</b> Engineering: Computer, Chemical, Civil, Electrical, Mechanical Business: Business, Accounting, Finance, Economics Other: Chemistry, Physical Education, Theater, General Studies	<b>35 (60%)</b> 14 (24%) 5 ( 9%) 4 ( 7%)
<b>TECH ED</b>	<b>Engineering (Civil, Electrical, General, Industrial, Mechanical), Industrial Technology, Computer &amp; Information Sciences</b> Related: Communication, Interior Design, Film Studies, Theater Business: Business, Hospitality Mgt Other: Psychology	<b>11 (61%)</b> 4 (22%) 2 (11%) 1 ( 6%)
<b>BUSINESS ED</b>	<b>Business Administration or Management Major or Minor</b> Related: Accounting, Marketing, Finance, Information Systems Management, Hospitality Management, Consumer Economics Other: Engineering Technology, Industrial Technology, Mathematics, Elementary Education	<b>41 (73%)</b> 11 (20%) 4 ( 7%)
<b>ENGLISH</b>	<b>English Major or Minor</b> Other: Communication, Humanities, Psychology	<b>49 (92%)</b> 4 ( 8%)
<b>FOREIGN LANGUAGES</b>		
<b>Spanish</b>	<b>Spanish Major</b> Other: Behavioral Science, Biology, Psychology	<b>26 (90%)</b> 3 (10%)
<b>French</b>	<b>French Major</b> Other: Psychology	<b>3 (75%)</b> 1 (25%)
<b>German</b>	<b>German Major</b>	<b>1 (100%)</b>
<b>Latin</b>	<b>Classical Studies or Art History Major</b>	<b>2 (100%)</b>

## How ARTC Teachers Compare to Other New Teachers in Delaware

### Date of Hire

Late hiring has been repeatedly identified as an issue in teacher supply in Delaware. A comparison of the timing of ARTC hires with all teachers hired in 2003 – 2004 (Raffel & Prullelo, 2004) indicates that the pattern of late hiring is even more pronounced for ARTC teachers than for all Delaware teachers (Figure I-8). In that year, almost two-thirds of ARTC teachers were issued contracts in August, compared to less than half of all Delaware teachers. ARTC teachers are also four times less likely to be hired in June, July or September (8% versus 37% of all teachers) and more likely to be hired during the school year, October to May (28% versus 19% of all teachers).

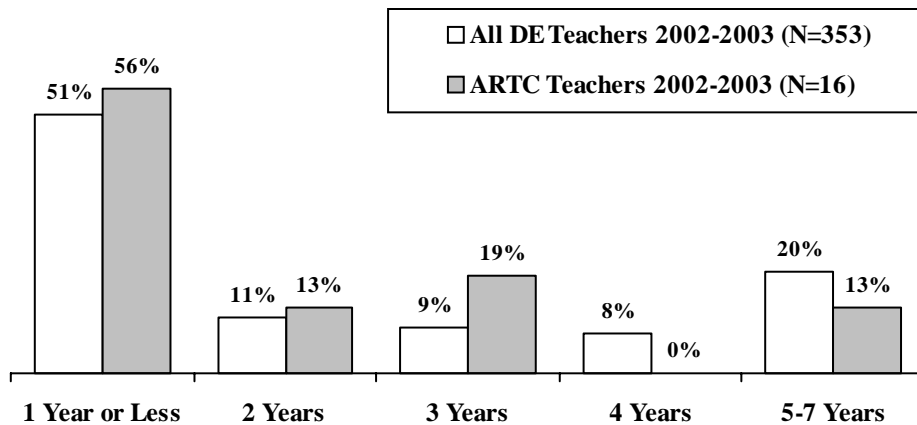


**Figure I-8.**  
Date of Hire for ARTC and All New Teachers in the 2003-2004 School Year

### Attrition

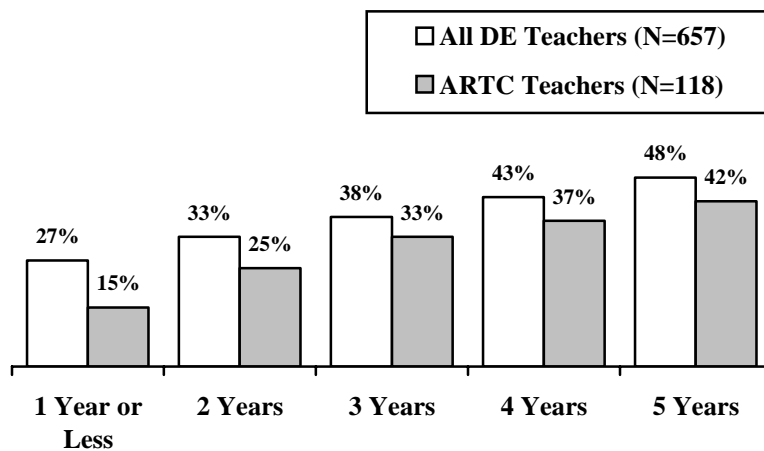
Raffel and Prullelo (2004) also report data on years-of-experience for teachers who left teaching in Delaware between the 2002 – 2003 and 2003 – 2004 school years. Sixteen ARTC teachers left their positions during this same time span. Since these teachers could only have a maximum of 7 years experience, they were compared with the 353 Delaware teachers who left with seven or less years of experience.

Like all Delaware teachers, about half of the ARTC teachers who leave their positions do so with one year of experience or less (Figure I-9). They may be somewhat more likely to leave with three years of experience, but they are less likely than other teachers to leave with four or more years experience.



**Figure I-9.**  
**Years-of-Experience For ARTC and All Teachers Leaving Between the 2002 and 2003 School Years**

Raffel and Prulello also report the cumulative impact of teachers leaving within the first few years of service. From this perspective, ARTC teachers are somewhat less likely than all other teachers to leave their positions within the first five years. Cumulative attrition among ARTC teachers in the first five years has been about 13% lower than among all new teachers (Figure I-10).

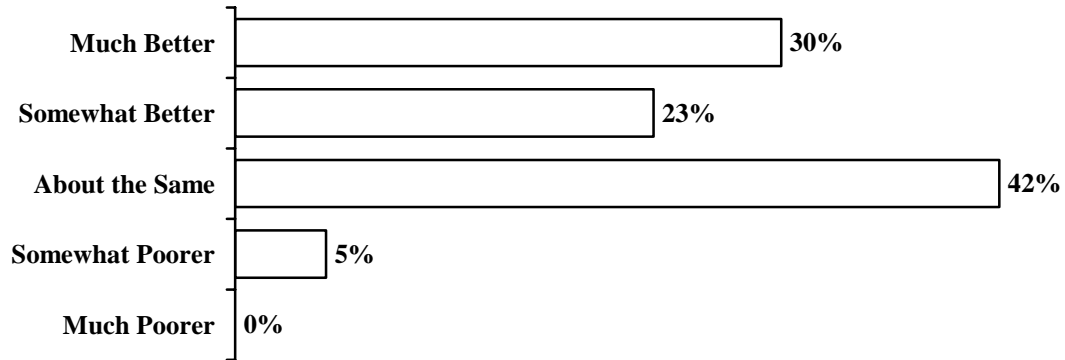


**Figure I-10.**  
**Cumulative Percent of ARTC and All Teachers Departing Within the First Few Years of Service**

Taken together, the data suggest that, like other new hires, ARTC teachers who leave do so early in their careers, but they also may be more likely to stay in teaching than other new hires. This pattern is rather striking, given their lack of prior training and experience, and exceptionally late hiring.

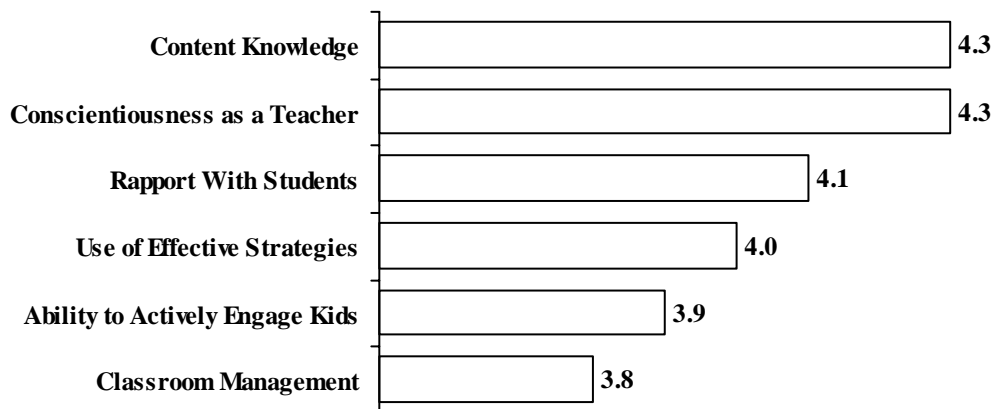
And this is not because ARTC is an “easy” route for poor quality teachers. ARTC candidates are being

certified and retained only when they are performing as well as (or better than) their peers. According to their supervisors, 95% of ARTC graduates are performing as well or better than other teachers at similar points in their careers and more than half are performing better than their colleagues.



**Figure I-11.**  
**Supervisor Ratings of ARTC Graduates' Overall Performance Compared to Other Teachers at Similar Points in Their Careers**

They are also rated "strong" or "very strong" across a variety of specific domains of teaching (Figure I-12, Part III and Appendix G). This is especially true in content-area knowledge and their conscientiousness as a teacher, ratings that may reflect the greater life experience and maturity of ARTC teachers relative to many other beginning teachers.



*(1 = very weak; 2 = weak; 3 = adequate; 4 = strong; 5 = very strong)*

**Figure I-12.**  
**Supervisor Ratings of Performance in Specific Domains of Teaching**

### **Who Succeeds and Who Does Not**

We have certainly learned that ARTC works for most, but not all teachers. As with any profession, it should be expected that some ARTC candidates and teachers will leave simply due to changing life circumstances we cannot anticipate or control, but most losses due to difficulty adjusting to the classroom occur early on, before candidates even complete their ARTC course work. About 20% of those enrolled leave before completing their ARTC courses, and about half of those due to poor performance in their classes and/or classrooms. Candidates who complete their course work, on the other hand, are very likely to complete certification and to stay in teaching. They are only very rarely (5%) not renewed by their schools due to unsatisfactory classroom performance.

We have also learned, perhaps not surprisingly, that the demographic information we have compiled provides little guidance in predicting who will succeed and remain in teaching (Part III and Appendices C and D). Many measures that are often emphasized in increasing the quality of teachers do not appear to predict the success of ARTC teachers. Those who complete the program do not differ from those who do not in whether they have an advanced degree in their subjects or a high college GPA. In fact, our data indicate a somewhat higher success rate for those with lower GPA's between 2.0 and 2.4. Prior education courses and classroom experience similarly do not predict who will stay and succeed. On the other hand, there is some evidence that those who make the transition in mid-career may be more successful. Individuals who were full-time students and those who were over 50 prior to entering ARTC were less likely to complete the program.

It will be interesting to see whether the more-structured new teacher mentoring program recently initiated across the state will impact retention of new teachers, including ARTC teachers, during the first two years in the classroom. Since half of those who leave the ARTC program do so for personal rather than performance reasons, however, the absolute number of new teachers potentially impacted by this change may be small.

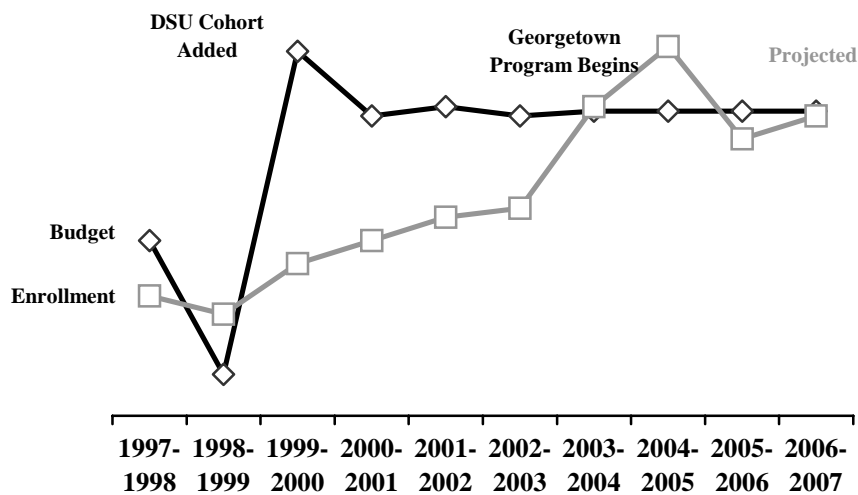
On the other hand, as has been proposed in the past, with mentoring resources stretched in many schools, and given the special needs of ARTC teachers in the first weeks and months in the classroom,

consideration should be given to providing dedicated mentoring through the ARTC program. Christina is currently the only district that employs a mentor whose only job is to support ARTC teachers. This model should be further explored at the state and district level.

**Challenges and Solutions**

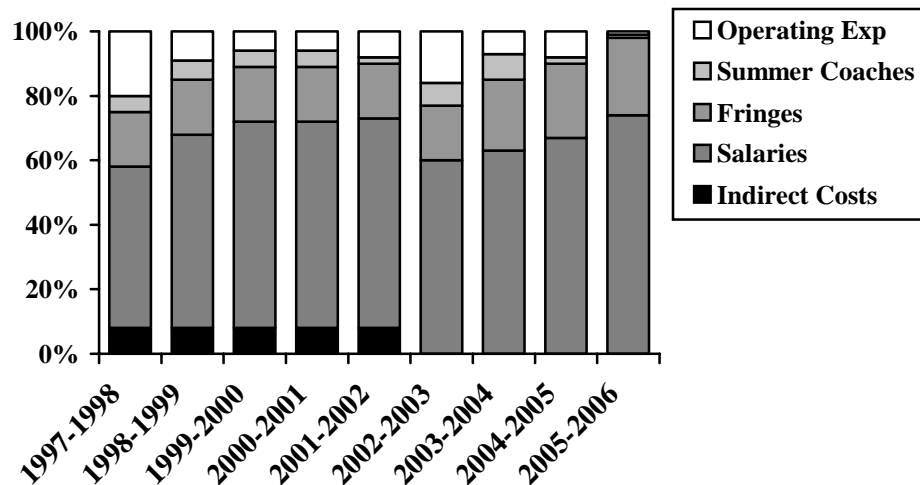
**Program Funding**

Growth in the number of ARTC candidates and a budget that has not increased in six years has impacted the adequacy of resources in a number of areas. The ARTC budget has remained static since 2000, even as enrollments and advisement demands have continued to grow (Figure I-13).



**Figure I-13.  
Enrollments and Budgets**

Program growth has thus far been managed within this budget, but as indicated in Figure I-7, salaries and especially very large increases in fringes in 2003 and 2006, have dramatically reduced or eliminated funds for all other budget categories. Cuts have already been made in a number of critical areas: the number of experienced teacher "coaches" hired to support candidates enrolled in the Summer Institute; instructional materials and equipment; conference travel and expenditures for office equipment replacement.



**Figure I-14.**  
**Budgets by Year and Category**

The 2006 – 2007 budget eliminates all funding for “teacher coaches” and a graduate assistant position that not only supports the production of this report, but also critical recruitment functions like website development and maintenance, and management of databases of potential candidates. The coordinator and assistant coordinator plan to perform additional duties beyond their regular appointments to support basic operating expenses like phone, copying and supplies.

This pattern cannot be long sustained, and since Delaware cannot qualify for federal Transition to Teaching grants, other sources of program support must be explored. It is likely, however, that a modest increase in the ARTC budget will be required to maintain the current program.

### **Financial Support for Candidates**

Many ARTC candidates continue to experience significant difficulty paying course tuition. This is especially true during the first academic-year semester of courses, when many are not yet being paid by their districts, and for those who do not qualify for in-state tuition. The need now exceeds the funds available for course reimbursement, loans and scholarships, and more ARTC teachers are being forced to delay their coursework because they cannot pay tuition.

ARTC candidates rely primarily on district course reimbursement (including Critical Needs Scholarship funds) that may only reimburse a small percent of course costs and then only months after tuition has been paid.

Funding for Critical Needs Scholarships did increase in 2005 – 2006, but the Special Institute, which can help with out-of-state tuition and provides funding at the time of registration, has not been increased for many years and is no longer able to support ARTC teachers. Consideration should be given to increasing Special Institute funding and/or to revising Special Institute rules to increase the impact of existing funds. Allowing students to receive Special Institute funding for only part of their certification course work – for example, for only their first ARTC course or only to help make up the difference between in- and out-of-state tuition – could dramatically ease the financial burdens for those in transition.

### **Summary Recommendations**

At the state level, consideration should be given to

- the level of funding required to sustain the current ARTC program;
- increasing existing sources of financial aid and/or better utilizing the funds currently available;
- developing a state recruitment web site to explain certification requirements and procedures to prospective teachers and link them to information on state-approved certification programs; and
- designating ARTC for school mentoring funds.

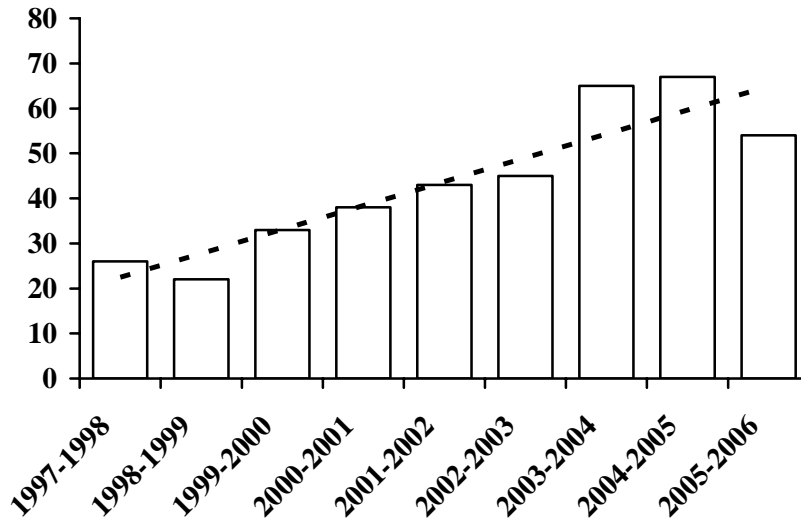
At the program level, additional efforts should be directed toward developing a recruitment plan that

- better supports Kent and Sussex County districts; and
- targets engineers and individuals in science-related areas like marine science and agriculture.

## PART II. Participation Patterns 1997 – 1998 to 2005 – 2006 Cohorts

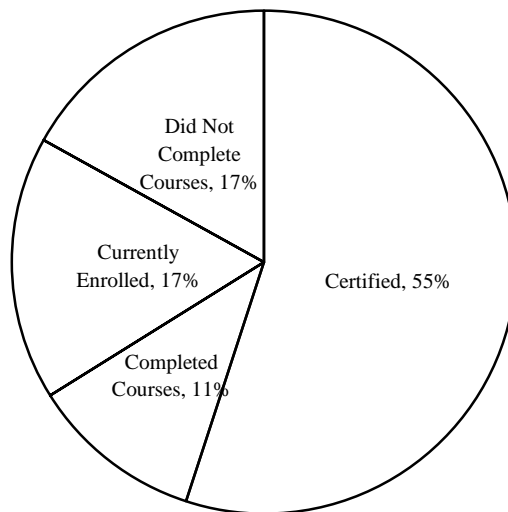
### Enrollment Patterns

ARTC enrollments have increased fairly steadily since the beginning of the program (Fig. II-1).



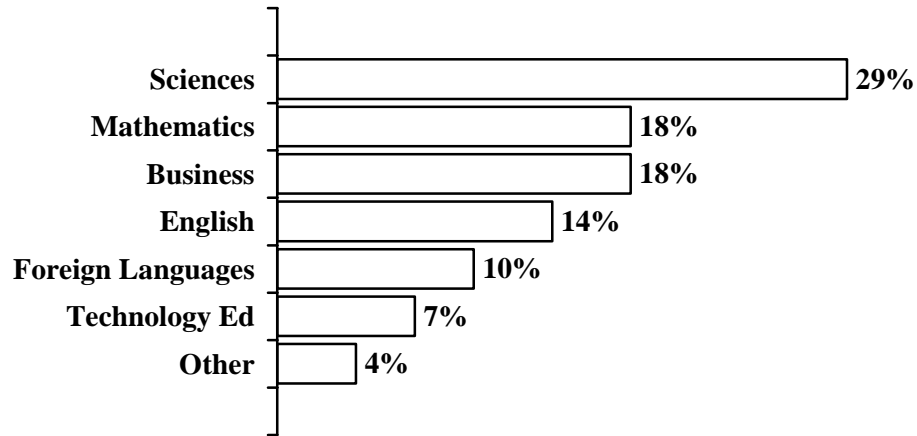
**Figure II-1.**  
**Number of Candidates Enrolled By Cohort**

For the first time since the program began a majority of all candidates enrolled are certified in Delaware (Figure I-2).



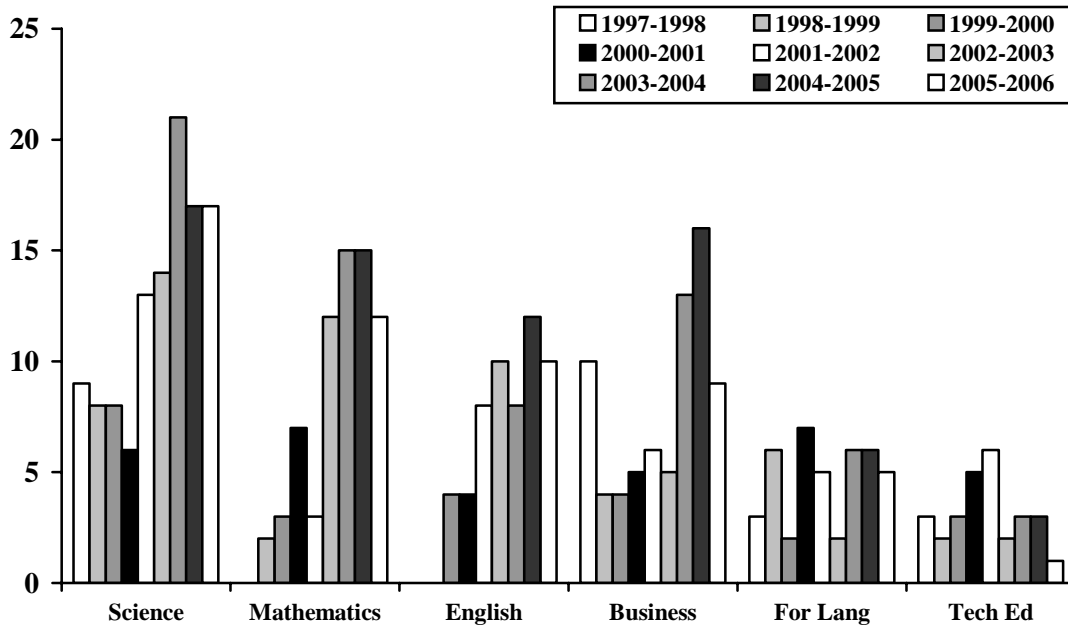
**Figure I-2.**  
**Program Completion and Certification**

Almost one in three were hired to teach science, including the agricultural sciences, while another one in three were hired to teach business and mathematics (Figure II-3). Most (82%) were hired to teach at the high school level.



**Figure II-3.**  
**Subject Areas of Candidates Enrolled 1997 – 1998 to 2005 – 2006**

Enrollments have been consistently strong in science and mathematics (Figure II-4).



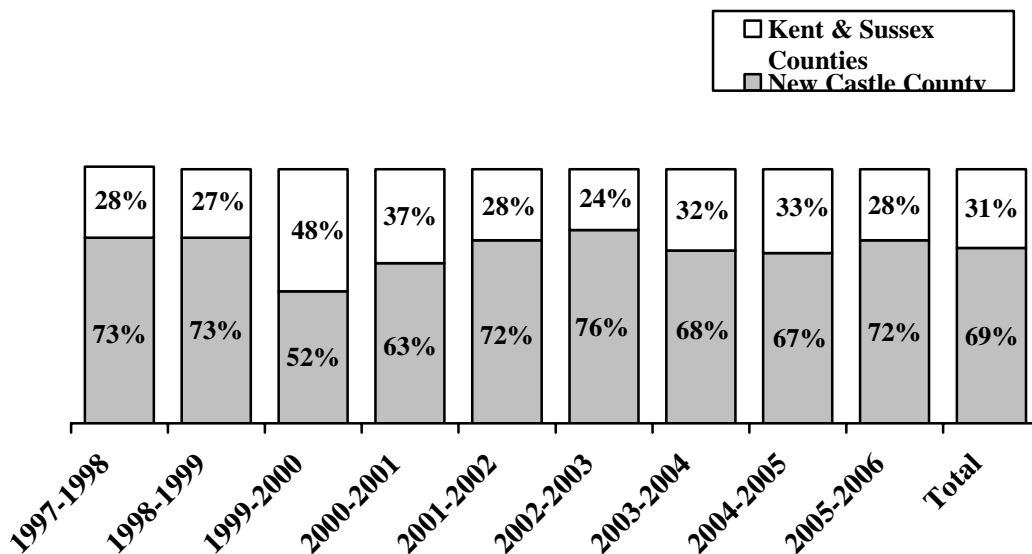
**Figure II-4.**  
**Subject Area Enrollments by Cohort**

### District and School Participation

A large majority of Delaware schools and charters have enrolled teachers in ARTC since its beginning in August 1997 (Appendix A):

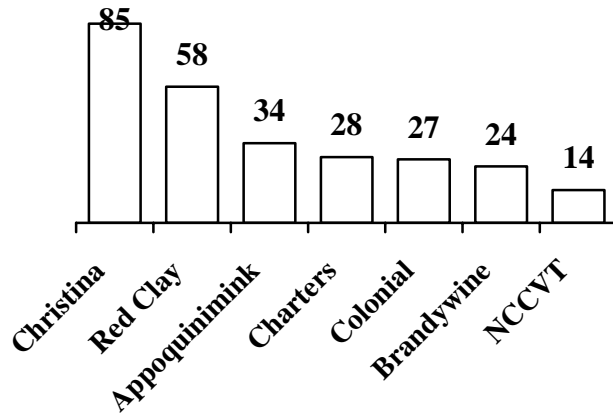
- all 19 regular public and vocational technical school districts
- 52 of all 61 (87%) regular and vocational-technical secondary schools
  - all 29 regular and vocational-technical high schools
  - over 80% of middle schools
- 7 charter schools
- five district or state programs (D.A.P.I., the Positive Learning Center in Red Clay; Ferris School for Boys; Douglass Behavioral School; Sara Pyle Academy)

About two-thirds of candidates (69%) were enrolled by New Castle County districts and charters, the remaining third by Kent and Sussex County schools (Figure II-5).



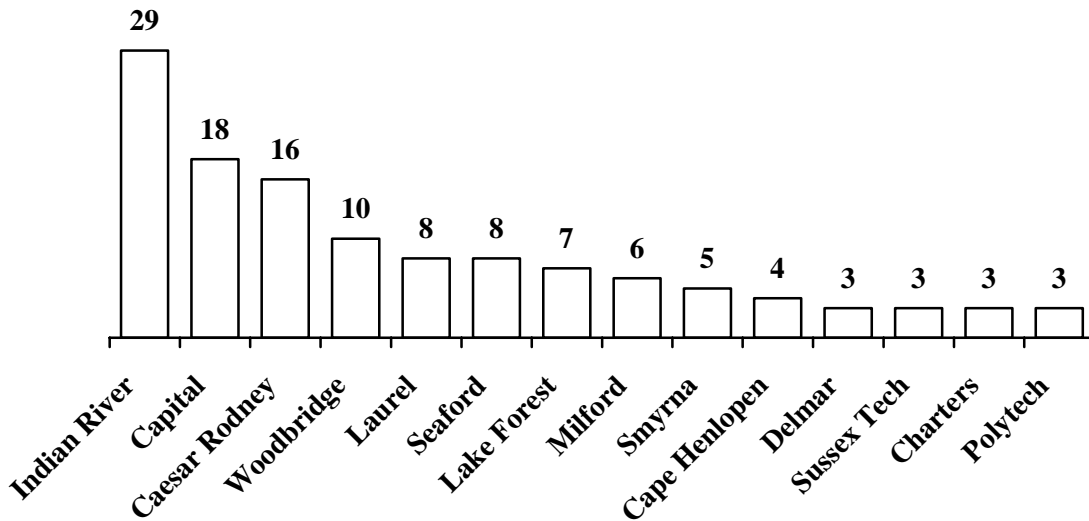
**Figure II-5.  
Enrollments by County by Cohort**

Not surprisingly, larger districts account for most ARTC enrollments. In New Castle County (Figure II-6), more than half of ARTC teachers were enrolled by the Christina and Red Clay Districts.



**Figure II-6.**  
New Castle County Enrollments by District

In Kent and Sussex Counties, one-quarter were enrolled by the Indian River School District (Figure II-7).



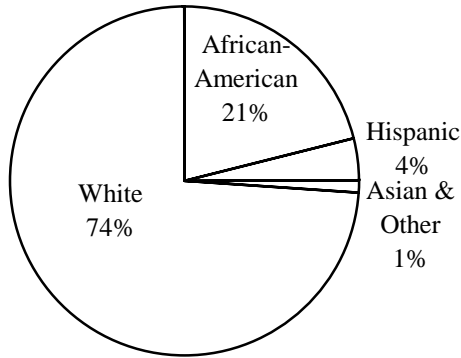
**Figure II-7.**  
Kent and Sussex County Enrollments by District

**Candidate Profile**

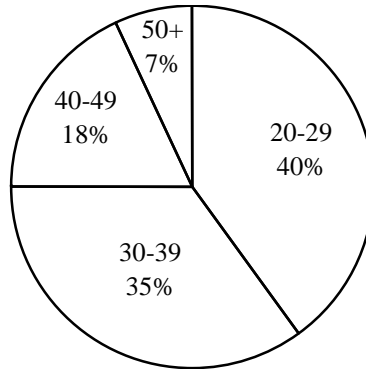
**Demographics**

Districts enrolled 393 candidates in the first nine ARTC cohorts. Appendix B summarizes characteristics of these candidates by cohort. Candidates were

- evenly balanced by gender (52% women and 48% men);
- one-quarter minority , about twice the proportion of minority teachers state-wide (Figure II-8); and
- mostly in their late 20's and 30's (Figure II-9)



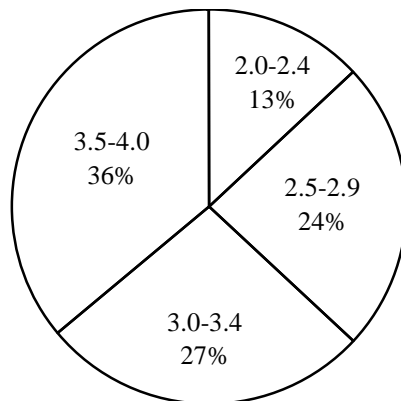
**Figure II-8.**  
**Proportion of Minority Candidates Enrolled**



**Figure II-9.**  
**Age of Candidates Enrolled**

**Academic Backgrounds**

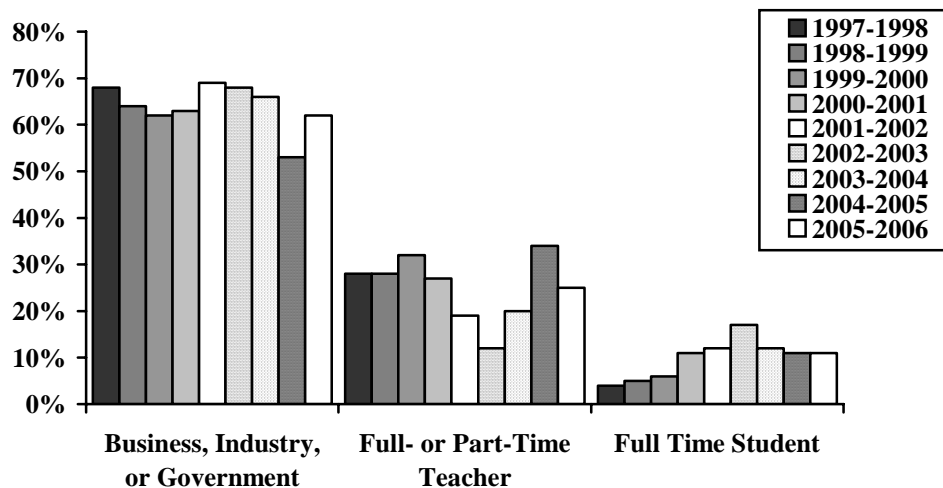
Of the 376 candidates for whom data is available, about one-third (31%) had already earned one or more advanced degrees: 25% had one or more master's degrees and 6% had earned a doctorate in their subject areas. Almost two-thirds had earned an overall GPA of 3.0 or higher for the highest degree earned (Figure II-10).



**Figure II-10.**  
**GPA For Highest Degree Earned**

**Employment Immediately Prior to Taking the ARTC Teaching Position**

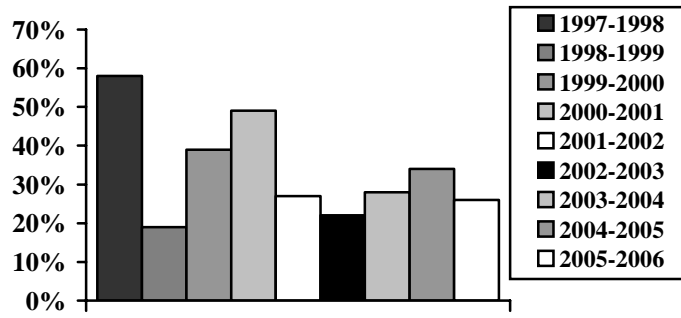
Most ARTC teachers come into teaching directly from other careers and professions (Figure II-11). In the year prior to taking their ARTC positions, almost two-thirds (62%) were employed in business, industry, or government service. About one-quarter (25%) were employed in an educational setting (teaching full- or part-time, working as aides or paraprofessionals, or substitute teaching) for at least some portion of the year. This group is extremely varied, ranging from those who had been teaching in private schools for as long as 17 years to those who substituted for a few weeks or months before being offered their ARTC position. Only one in ten was a full-time student prior to taking their ARTC position.



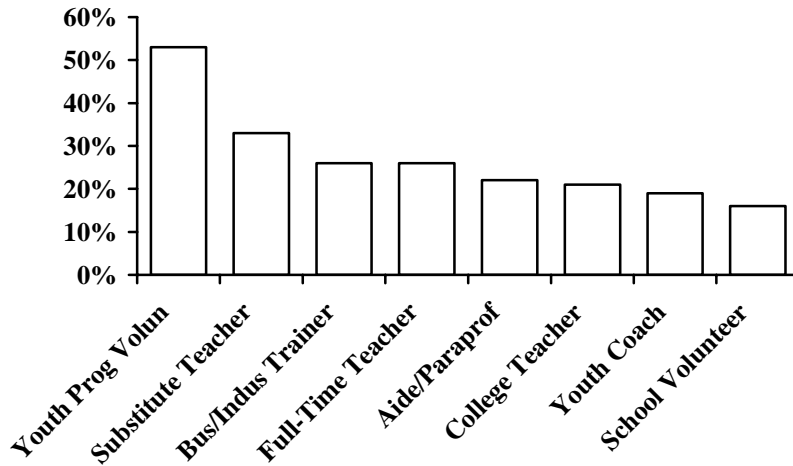
**Figure II-11.**  
**Employment in the Year Immediately Prior to Taking ARTC Position By Cohort**

**Prior Experience Related to Education, Teaching or Working with Children**

Few candidates report taking education courses (Figure II-12) prior to entering the program. Candidates also report little or no experience related to teaching or working with children at any time prior to entering the program (Figure II-13). Not surprisingly, candidates most commonly reported volunteering with community youth programs like scouting, Sunday school or Little League (53%). About one-third of candidates reported substitute teaching (33%) at some time before entering the program; about one in four (26%) reported teaching full- or part-time and 22% had served as classroom aides or paraprofessionals. Twenty-six percent reported at some point providing training for adults in business, industry or the military. Only 16% had volunteered in schools. One in five had previously taught at the college level.



**Figure II-12.**  
**Proportion of Candidates Taking At Least One Education Course Prior to Enrolling in ARTC**



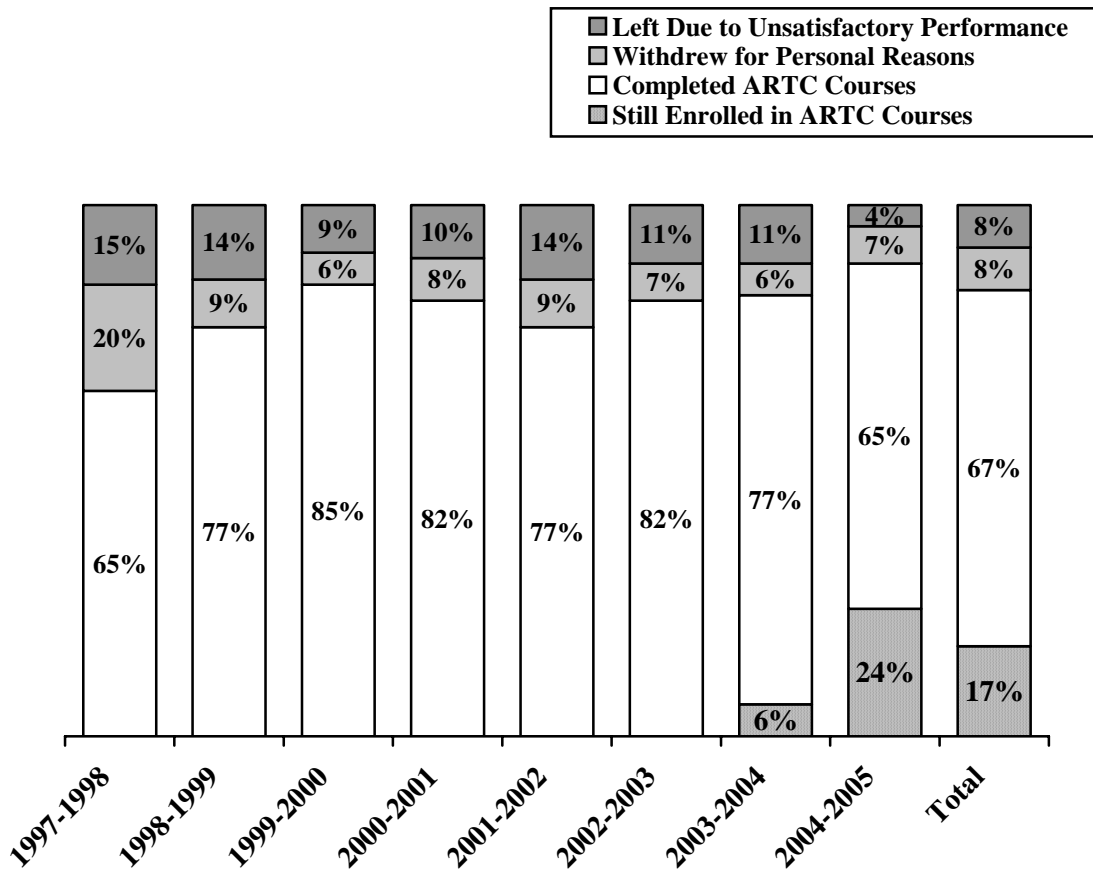
**Figure II-13.**  
**Reported Experience With Teaching or Children at Any Time Prior to Entering ARTC**

## Part III. Program Completion, Retention and Classroom Performance of ARTC Graduates

### Are ARTC Teachers Completing Their Courses?

Sixty-seven (17%) of those who enrolled in at least one ARTC course failed to complete their ARTC classes (Appendix C and Figure III-1). Overall, this is consistent with statistics compiled by the National Education Association, indicating that about 20% of new teachers leave teaching by the end of the first year.

Performance in ARTC courses and/or in the classroom was an issue for about half (54%) of those who failed to complete the core program of courses and seminars (Appendix C). The remaining candidates withdrew for a variety of personal and professional reasons unrelated to satisfactory performance in courses or in the classroom, and a number of those have continued to teach in Delaware and elsewhere.



**Figure III-1.  
Patterns of Attrition by Cohort**

## Comparison of Candidates Who Completed Courses versus Those Who Did Not

Candidates who complete their ARTC courses are very similar to those who did not across several demographic measures (Appendix D): highest degree earned, county, whether they were employed in an education-related position or had taken education courses prior to enrolling in the program.

Successful candidates did more often tend to

- be female (84%) rather than male (74%);
- be Hispanic (91%) rather than Asian or other non-African-American minority (40%);
- be employed in middle schools (91%) rather than high schools (77%);
- be teaching business or mathematics (88% to 89%) rather than other subjects (71% to 77%); and
- have taught part-time immediately prior to taking their teaching job (94%) as opposed to other types of prior employment (67% to 82%).

Less successful candidates appear to include those who were

- over 50 (56%) versus other age groups (79% to 83%);
- full-time students (73%) immediately prior to entering the program versus other employment (80% to 87%); and
- classroom aides or paraprofessionals (69%) at some time in their careers.

### Are ARTC Teachers Staying After They Complete the Program?

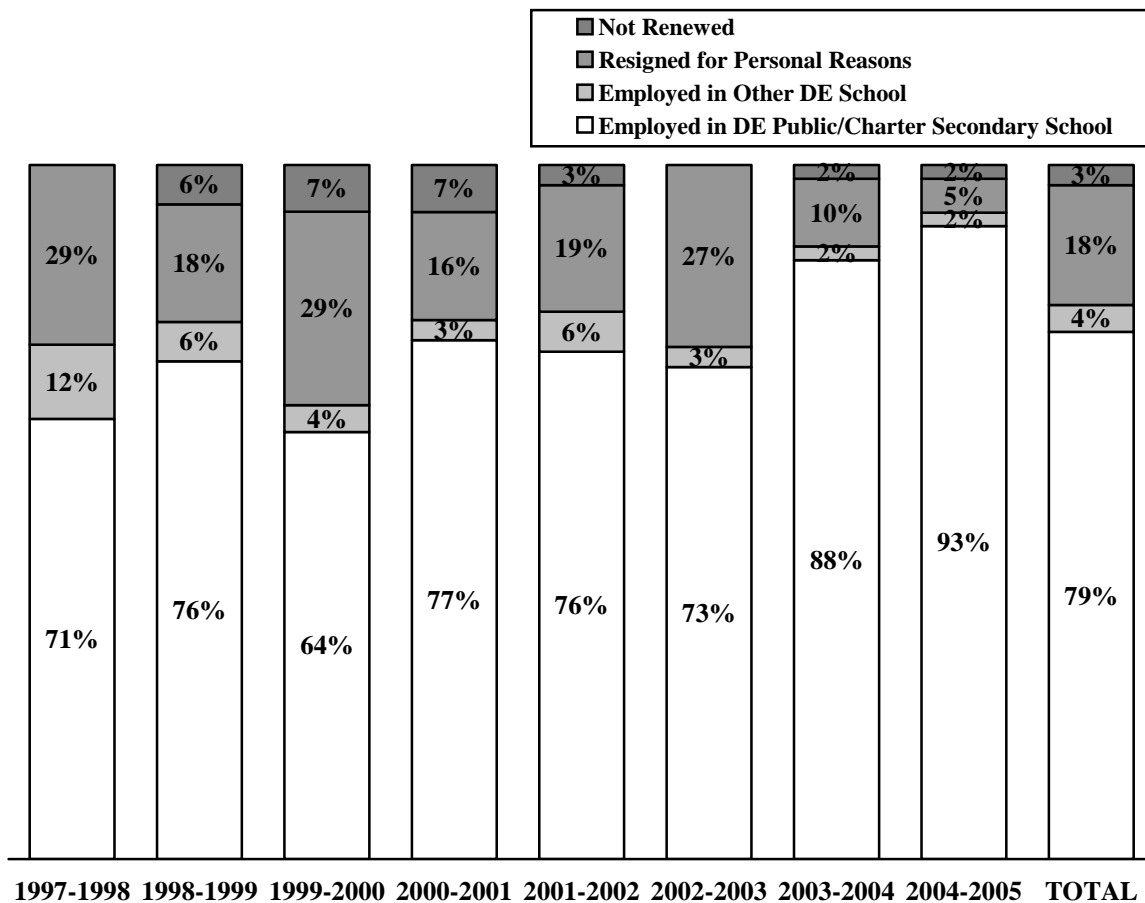
Retention data was obtained from Supervisor Surveys (see below) and Delaware Department of Education records for all 257 teachers who completed ARTC courses between 1997 – 1998 and 2005 – 2006.

Retention has been very high among ARTC graduates (Appendix E and Figure III-2). Seventy-nine percent of all teachers who completed ARTC course work are still teaching or performing administrative duties in Delaware public or charter secondary schools. Eighty-three percent are still teaching in Delaware public, private or charter schools.

Using the most conservative measure of “retention” (including only those who are still employed in the secondary public or charter schools that are specifically targeted by ARTC) and including the ARTC internship year, this translates to retention rates of 64% to 77% at five or more years; 76% at four years; 73% at three

years; and about 90% at one and two years.

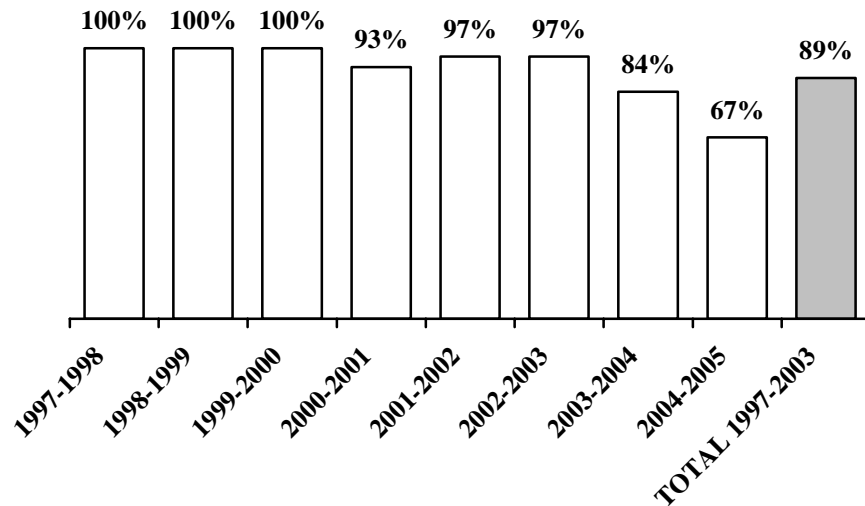
As indicated Figure III-2, very few candidates who successfully complete their ARTC courses are later not renewed due to unsatisfactory classroom performance (3%). Most of those who leave their positions after completing courses (85%) do so for personal or professional reasons unrelated to classroom performance, and are very likely to continue to teach in Delaware and elsewhere.



**Figure III-2.**  
**Retention of ARTC Graduates by Cohort**

**Are ARTC Teachers Succeeding in Becoming Certified and Tenured?**

Department of Education records were used to determine whether ARTC teachers who completed their courses also completed all certification requirements (Praxis, any additional content-area courses required, documentation of their internship year and school recommendation for certification). ARTC teachers who complete courses and are renewed by their school districts are successfully completing certification (Appendix F and Figure III-3) and receiving a Standard Certificates in their content areas.



**Figure III-3.**  
**Percent of Fully Certified Graduates by Cohort**

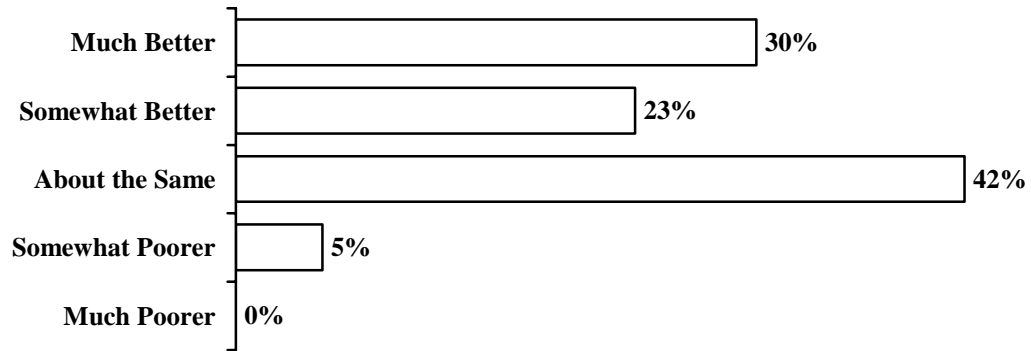
Tenure status of ARTC teachers was assessed based upon supervisor reports. ARTC teachers are being granted tenure, where applicable (Appendix F). All of those who are not yet tenured are working in settings where tenure is not an option (administrative positions or in charter schools where tenure is not offered) or are not yet eligible.

### **Are They Succeeding in the Classroom?**

Surveys (Appendix H) were sent to the current supervisors of all 155 candidates in the 2000 – 2001 to 2004 – 2005 cohorts who had completed their ARTC course work by January 2006 and were still employed in target schools. All 155 surveys were completed.

#### **Supervisor Ratings of Overall Performance**

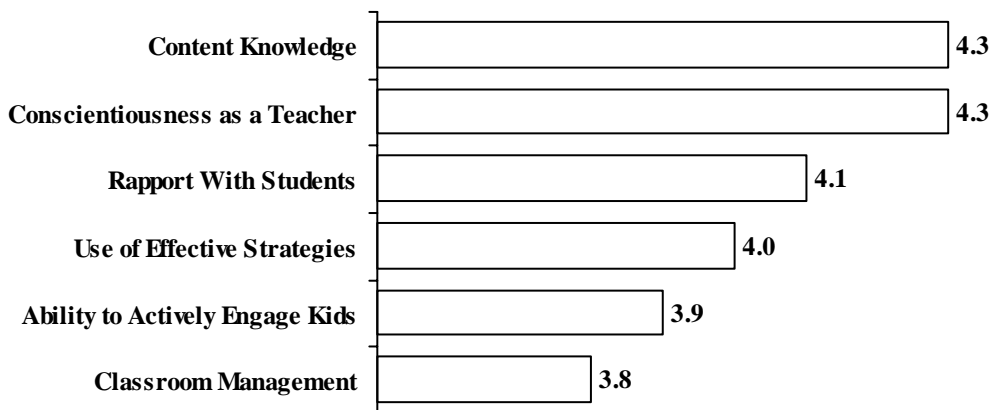
Supervisors compared the overall performance of their ARTC teachers with the performance of other teachers at similar points in their careers using a 5-point scale from "much poorer" to "much better." Their responses indicate that ARTC teachers are performing very well in the classroom (Appendix G and Figure III-4). Ninety-five percent rated their ARTC teachers as performing as well as or better than their peers and over half (53%) were performing somewhat or much better.



**Figure III-4.**  
**Supervisor Ratings of ARTC Graduates' Overall Performance**

**Supervisors' Ratings of Performance in Specific Domains of Teaching**

Supervisors also evaluated their ARTC teachers' performance in several specific domains of teaching, ARTC graduates are perceived as "strong" or "very strong" across all dimensions (Appendix G and Figure III-5), especially in their knowledge of subject matter and conscientiousness as teachers.



*(1 = very weak; 2 = weak; 3 = adequate; 4 = strong; 5 = very strong)*

**Figure III-5.**  
**Supervisor Ratings of Performance in Specific Domains of Teaching**

**Supervisor Satisfaction With ARTC Teachers**

Satisfaction with ARTC teachers is very high among supervisors. Based on their experiences with a particular ARTC teacher, over 90% would be likely to recommend hiring another ARTC teacher in the future; the remaining supervisors indicate that it would depend upon the individual (Appendix G).

## APPENDIX A

### District and School Participation 1997 – 1998 to 2005 – 2006 Cohorts (N=393)

<b>NEW CASTLE COUNTY</b>	<b>270</b>	<b>KENT &amp; SUSSEX COUNTIES</b>	<b>123</b>
<b>Appoquinimink</b>	<b>34</b>	<b>Caesar Rodney</b>	<b>16</b>
Middletown Middle School	2	Fifer Middle School	1
Redding Middle School	5	Caesar Rodney High School	15
Middletown High School	27	<b>Cape Henlopen</b>	<b>4</b>
<b>Brandywine</b>	<b>24</b>	Mariner Middle School	1
Hanby Middle School	1	Cape Henlopen High School	3
Talley Middle School	3	<b>Capital</b>	<b>18</b>
Brandywine High School	7	Central Middle School	1
Concord High School	7	Dover High School	17
Mt Pleasant High School	5	<b>Delmar</b>	<b>3</b>
D.A.P.I.	1	Delmar Middle School	1
<b>Christina</b>	<b>85</b>	Delmar High School	2
Gauger-Cobbs Middle School	6	<b>Indian River</b>	<b>29</b>
Kirk Middle School	5	Selbyville Middle School	1
Shue-Medill Middle School	6	Sussex Central Middle School	1
Christiana High School	20	Indian River High School	7
Glasgow High School	19	Sussex Central High School	21
Newark High School	27	<b>Lake Forest</b>	<b>7</b>
The Douglass Behavior School	1	Chipman Middle School	2
Sara Pyle Academy	1	Lake Forest High School	5
<b>Colonial</b>	<b>27</b>	<b>Laurel</b>	<b>8</b>
George Read Middle School	3	Laurel High School	8
Gunning Bedford Middle School	1	<b>Milford</b>	<b>6</b>
Newcastle Middle School	1	Milford Middle School	2
William Penn High School	22	Milford High School	4
<b>Red Clay</b>	<b>58</b>	<b>Seaford</b>	<b>8</b>
AI duPont Middle School	2	Seaford Middle School	5
Conrad Middle School	4	Seaford High School	3
HB duPont Middle School	1	<b>Smyrna</b>	<b>5</b>
Skyline Middle School	1	Smyrna High School	5
Stanton Middle School	5	<b>Woodbridge</b>	<b>10</b>
AI duPont High School	13	Woodbridge Middle School	1
Cab Calloway School of the Arts	4	Woodbridge High School	9
Dickinson High School	14	<b>Polytech High School</b>	<b>3</b>
McKean High School	13	<b>Sussex Technical High School</b>	<b>3</b>
Positive Learning Center	1	<b>Charters</b>	<b>3</b>
<b>New Castle Co Vo-Tech</b>	<b>14</b>	Positive Outcomes Charter School	3
Delcastle Technical High School	8		
Hodgson Vo-Tech High School	3		
Howard High School of Technology	1		
Ferris School for Boys	2		
<b>Charters</b>	<b>28</b>		
The Charter School of Wilmington	14		
Delaware Military Academy	5		
Marion T. Academy	5		
MOT Charter	1		
Richard Milburn Academy	2		
Newark Charter School	1		

**APPENDIX B**  
**Profile of Candidates Enrolled in ARTC**  
**1997 – 1998 to 2005 – 2006 Cohorts (N = 393)**

<b>COHORT:</b>	<b>1997-98</b>	<b>1998-99</b>	<b>1999-00</b>	<b>2000-01</b>	<b>2001-02</b>	<b>2002-03</b>	<b>2003-04</b>	<b>2004-05</b>	<b>2005-2006</b>	<b>TOTAL</b>
<b>TOTAL ENROLLMENT</b>	<b>26 ( 7%)</b>	<b>22 ( 6%)</b>	<b>33 (8%)</b>	<b>38 (10%)</b>	<b>43 (11%)</b>	<b>45 (11%)</b>	<b>65 (16%)</b>	<b>67 (17%)</b>	<b>54 (14%)</b>	<b>393 (100%)</b>
<b>STATUS IN PROGRAM</b>										
Certified	16 (61%)	16 (73%)	26 (79%)	27 (71%)	31 (72%)	32 (71%)	42 (65%)	27 (40%)	0 ( 0%)	217 (55%)
Completed ARTC Courses	1 ( 4%)	1 ( 4%)	2 ( 6%)	4 (11%)	2 ( 5%)	5 (11%)	8 (12%)	17 (25%)	1 ( 2%)	41 (11%)
Did Not Complete ARTC Courses	9 (35%)	5 (23%)	5 (15%)	7 (18%)	10 (23%)	8 (18%)	11 (17%)	8 (12%)	4 ( 7%)	67 (17%)
Currently Enrolled							4 ( 6%)	15 (23%)	49 (91%)	68 (17%)
<b>RECRUITMENT</b>										
thru ARTC	1 ( 4%)	4 (18%)	18 (55%)	23 (60%)	27 (63%)	38 (84%)	44 (68%)	46 (69%)	42 (78%)	243 (62%)
<b>GEOGRAPHIC AREA</b>										
New Castle County	19 (73%)	16 (73%)	17 (52%)	24 (63%)	31 (72%)	34 (76%)	45 (69%)	45 (67%)	39 (72%)	270 (69%)
Kent and Sussex Counties	7 (27%)	6 (27%)	16 (48%)	14 (37%)	12 (28%)	11 (24%)	20 (31%)	22 (33%)	15 (28%)	123 (31%)
<b>LEVEL TAUGHT</b>										
High School	21 (80%)	17 (77%)	29 (88%)	28 (74%)	37 (86%)	41 (91%)	54 (83%)	51 (76%)	45 (83%)	323 (82%)
Middle School	5 (20%)	5 (23%)	4 (12%)	10 (26%)	6 (14%)	4 ( 9%)	11 (17%)	16 (24%)	9 (17%)	70 (18%)
<b>AGE</b>										
20 – 29	8 (31%)	7 (32%)	12 (36%)	15 (40%)	20 (47%)	21 (47%)	25 (39%)	28 (42%)	20 (37%)	156 (40%)
30 – 39	14 (54%)	11 (50%)	15 (46%)	11 (29%)	8 (19%)	14 (31%)	23 (35%)	22 (33%)	18 (33%)	136 (35%)
40 – 49	3 (12%)	2 ( 9%)	5 (15%)	8 (21%)	11 (25%)	6 (13%)	12 (19%)	15 (22%)	11 (21%)	73 (18%)
50 +	1 ( 4%)	2 ( 9%)	1 ( 3%)	4 (10%)	4 ( 9%)	4 ( 9%)	5 ( 7%)	2 ( 3%)	5 ( 9%)	28 ( 7%)
<b>GENDER</b>										
Female	7 (27%)	15 (68%)	17 (52%)	17 (45%)	23 (54%)	24 (53%)	34 (52%)	36 (54%)	32 (60%)	205 (52%)
Male	19 (73%)	7 (32%)	16 (48%)	21 (55%)	20 (46%)	21 (47%)	31 (48%)	31 (46%)	22 (40%)	188 (48%)

COHORT:	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	TOTAL
<b>MINORITY STATUS</b>										
African-American	6 (23%)	4 (18%)	8 (24%)	4 (11%)	11 (26%)	4 ( 9%)	15 (23%)	15 (22%)	15 (28%)	82 (21%)
Hispanic		1 ( 5%)	3 ( 9%)	4 (11%)	2 ( 5%)	1 ( 2%)	1 ( 2%)	1 ( 2%)	1 ( 2%)	14 ( 4%)
Asian & Other	2 ( 8%)				1 ( 2%)	1 ( 2%)	1 ( 2%)	2 ( 3%)		7 ( 1%)
Caucasian	18 (69%)	17 (77%)	22 (67%)	30 (78%)	29 (67%)	39 (87%)	48 (73%)	49 (73%)	38 (70%)	290 (74%)
<b>HIGHEST DEGREE EARNED</b>										
Bachelor's	16 (62%)	16 (73%)	22 (67%)	25 (65%)	27 (63%)	30 (67%)	42 (65%)	49 (73%)	31 (57%)	258 (69%)
Master's	4 (15%)	2 ( 9%)	9 (27%)	11 (29%)	12 (28%)	12 (27%)	20 (30%)	11 (16%)	16 (30%)	97 (25%)
Doctorate	1 ( %)	3 (14%)	1 ( 3%)	1 (  %)	3 ( 7%)	2 ( 4%)	3 ( 5%)	2 ( 3%)	5 ( 9%)	21 ( 6%)
<b>GPA (HIGHEST DEGREE)</b>										
2.0 - 2.4	4 (25%)	2 (14%)	7 (24%)	4 (12%)	2 ( 5%)	5 (13%)	4 ( 8%)	8 (15%)	3 ( 8%)	39 (13%)
2.5 - 2.9	4 (25%)	4 (29%)	7 (24%)	9 (26%)	6 (16%)	7 (18%)	15 (28%)	12 (29%)	9 (22%)	73 (24%)
3.0 - 3.4	5 (31%)	5 (36%)	8 (28%)	9 (26%)	13 (35%)	9 (24%)	11 (21%)	8 (19%)	14 (33%)	82 (27%)
3.5 - 4.0	3 (19%)	3 (21%)	7 (24%)	13 (36%)	16 (44%)	17 (45%)	23 (43%)	14 (36%)	15 (37%)	111 (36%)
<b>SUBJECT AREA</b>										
Sciences	9 (35%)	8 (37%)	8 (24%)	6 (16%)	13 (30%)	14 (31%)	21 (32%)	17 (25%)	17 (32%)	113 (29%)
Business & Marketing	10 (39%)	4 (18%)	4 (12%)	5 (13%)	6 (14%)	5 (11%)	13 (20%)	16 (24%)	9 (17%)	72 (18%)
Mathematics	0 ( 0%)	2 ( 9%)	3 ( 9%)	7 (18%)	3 ( 7%)	12 (27%)	15 (23%)	15 (22%)	12 (22%)	69 (18%)
English	0 ( 0%)	0 ( 0%)	4 (12%)	4 (11%)	8 (19%)	10 (22%)	8 (12%)	11 (16%)	10 (19%)	55 (14%)
Foreign Languages	3 (12%)	6 (27%)	2 ( 6%)	7 (18%)	5 (12%)	2 ( 4%)	6 ( 9%)	5 ( 8%)	5 ( 9%)	41 (10%)
Technology Education	3 (12%)	2 ( 9%)	3 ( 9%)	5 (13%)	6 (14%)	2 ( 4%)	2 ( 3%)	3 ( 5%)	1 ( 2%)	27 ( 7%)
Other	1 ( 4%)	0 ( 0%)	9 (27%)	4 (11%)	2 ( 5%)	0 ( 0%)	0 ( 0%)	0 ( 0%)		16 ( 4%)
<b>PRIOR CERTIFICATION</b>										
Yes	2 ( 8%)	0 ( 0%)	0 ( 0%)	0 ( 0%)	3 ( 7%)	1 ( 2%)	0 ( 0%)	0 ( 0%)		6 ( 2%)
<b>PRIOR ED COURSES</b>										
None	10 (40%)	13 (62%)	19 (61%)	19 (51%)	30 (73%)	32 (78%)	39 (68%)	32 (67%)	32 (74%)	226 (66%)
One or More	15 (60%)	8 (38%)	12 (39%)	18 (49%)	11 (27%)	9 (22%)	18 (32%)	16 (33%)	11 (26%)	118 (34%)

COHORT:	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	TOTAL
<b>EMPLOYMENT IN YEAR PRIOR TO ARTC</b>										
Business	11 (44%)	6 (27%)	12 (39%)	14 (38%)	16 (40%)	15 (37%)	19 (33%)	10 (21%)	11 (26%)	114 (33%)
Industry	5 (20%)	5 (23%)	4 (13%)	5 (14%)	10 (24%)	10 (24%)	12 (21%)	14 (29%)	7 (16%)	72 (21%)
Government or Social Services	1 ( 4%)	3 (14%)	3 (10%)	4 (11%)	2 ( 5%)	3 ( 7%)	6 (11%)	3 ( 6%)	4 ( 9%)	29 ( 8%)
Full-time Teaching	6 (24%)	5 (23%)	6 (19%)	7 (19%)	5 (12%)	4 (10%)	7 (12%)	9 (19%)	1 ( 2%)	50 (15%)
Part-time Teaching	1 ( 4%)	1 ( 5%)	4 (13%)	3 ( 8%)	3 ( 7%)	1 ( 2%)	5 ( 9%)	6 (13%)	12 (28%)	36 (10%)
Full-time Student	1 ( 4%)	1 ( 5%)	2 ( 6%)	4 (10%)	5 (12%)	7 (17%)	8 (14%)	5 (10%)	6 (14%)	39 (11%)
At Home or Unemployed	0 ( 0%)	1 ( 3%)	0 ( 0%)	0 ( 0%)	0 ( 0%)	1 ( 3%)	0 ( 0%)	1 ( 2%)	2 ( 5%)	5 ( 2%)
<b>RELATED EXPERIENCE</b> (percentages within cohort may exceed 100%)										
Substitute Teacher	6 (24%)	6 (27%)	14 (45%)	17 (46%)	15 (36%)	11 (27%)	19 (33%)	13 (27%)	14 (33%)	115 (33%)
Youth Program Volunteer	4 (16%)	9 (41%)	19 (61%)	15 (41%)	29 (69%)	19 (46%)	43 (74%)	23(48%)	23 (54%)	184 (53%)
Full- or Part-Time Teacher	8 (32%)	6 (27%)	13 (42%)	10 (27%)	14(33%)	8 (20%)	16 (28%)	10 (21%)	6 (14%)	91 (26%)
Teacher in Business or Military	1 ( 4%)	5 (23%)	7 (23%)	13 (35%)	13 (31%)	10 (24%)	18 (31%)	9 (19%)	13 (30%)	89 (26%)
Classroom Aide or Para	5 (20%)	6 (27%)	9 (29%)	10 (27%)	8 (19%)	4 (10%)	17 (29%)	12 (25%)	6 (14%)	77 (22%)
Youth Coach	2 ( 8%)	3 (14%)	10 (32%)	9 (24%)	7 (17%)	7 (17%)	15 (26%)	8 (17%)	6 (14%)	67 (19%)
College Teacher	3 (12%)	4 (18%)	7 (23%)	9 (24%)	10 (24%)	8 (20%)	12 (21%)	7 (15%)	11 (26%)	71 (21%)
School Volunteer	2 ( 8%)	6 (27%)	1 ( 3%)	9 (24%)	6 (14%)	5 (12%)	11 (19%)	7 (15%)	9 (21%)	56 (16%)

**APPENDIX C**  
**Attrition Among Candidates Enrolled in ARTC Courses**  
**1997 – 1998 to 2005 – 2006 Cohorts**

<b>COHORT:</b>	<b>1997-98</b>	<b>1998-99</b>	<b>1999-00</b>	<b>2000-01</b>	<b>2001-02</b>	<b>2002-03</b>	<b>2003-04</b>	<b>2004-05</b>	<b>2005-06</b>	<b>TOTAL</b>
Candidates Enrolled	26	22	33	38	43	45	65	67	54	393
Completed / Certified	17	17	28	31	33	37	50	44	1	258
Still Completing ARTC Courses	0	0	0	0	0	0	4	15	49	68
Did Not Complete ARTC Courses	9	5	5	7	10	8	11	8	4	67
<b>Percent Attrition</b>	<b>35%</b>	<b>23%</b>	<b>15%</b>	<b>18%</b>	<b>23%</b>	<b>17%</b>	<b>17%</b>	<b>12%</b>	<b>7%</b>	<b>17%</b>
<b>REASONS FOR NOT COMPLETING</b>										
<b>Candidates Who Left Due to Unsatisfactory Performance in Courses and/or in the Classroom</b>	<b>4</b>	<b>3</b>	<b>3</b>	<b>4</b>	<b>6</b>	<b>5</b>	<b>7</b>	<b>3</b>	<b>1</b>	<b>36</b> <b>54%</b>
<b>Candidates Who Withdrew For Personal Reasons:</b>	<b>5</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>3</b>	<b>31</b> <b>46%</b>
<i>Completed Certification Via Another Route</i>	2									2
<i>Took Other DE School Position (elementary; counseling; private)</i>	1	1					1			3
<i>Position eliminated</i>			1	1	2		1	1		6
<i>Life Changes (move out-of-state; start a family)</i>		1	1	2		1	1	2	2	10
<i>Left Teaching</i>	2				1		1	1	1	6
<i>Reason Unknown</i>					1	2		1		4

**APPENDIX D**  
**Comparison of Candidates Who Completed**  
**Versus Those Who Did Not**  
**1997 – 1998 to 2005 – 2006 Cohorts**

	PROPORTION OF CANDIDATES ENROLLED WHO ...	
	COMPLETED ARTC COURSES	DID NOT COMPLETE ARTC COURSES
<b>NUMBER OF CANDIDATES</b>	<b>256</b>	<b>67</b>
<b>GENDER</b>		
Female	84%	16%
Male	74%	26%
<b>MINORITY STATUS</b>		
African-American	80%	20%
Hispanic	91%	9%
Asian & Other	40%	60%
White	80%	20%
<b>AGE</b>		
20 – 29	80%	20%
30 – 39	83%	17%
40 – 49	79%	21%
50 +	56%	44%
<b>HIGHEST DEGREE EARNED</b>		
Bachelor's	82%	18%
Master's or Doctorate	82%	18%
<b>GPA FOR HIGHEST DEGREE</b>		
2.0 - 2.4	94%	6%
2.5 - 2.9	88%	12%
3.0 - 3.4	87%	13%
3.5 - 4.0	87%	13%
<b>GEOGRAPHIC LOCATION</b>		
New Castle County	80%	20%
Kent & Sussex Counties	77%	23%
<b>LEVEL TAUGHT</b>		
High School	77%	23%
Middle School	91%	9%

**PROPORTION OF CANDIDATES ENROLLED  
WHO . . .**

	<b>COMPLETED ARTC COURSES</b>	<b>DID NOT COMPLETE ARTC COURSES</b>
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**SUBJECT AREA**

Business	88%	12%
English	71%	29%
Foreign Languages	71%	29%
Mathematics	89%	11%
Sciences	74%	26%
Technology Education	77%	23%

**PRIOR EDUCATION COURSES**

None	81%	19%
One or More	82%	18%

**EMPLOYMENT PRIOR TO ARTC**

Industry	84%	16%
Business	80%	20%
Government or Social Services	83%	17%
Full-time Teaching	80%	20%
Part-time Teaching	87%	13%
Full-Time Student	73%	27%
At Home/Unemployed	100%	

**PRIOR RELATED EXPERIENCE**

Substitute Teacher	80%	20%
Full- or Part-Time Teacher	84%	16%
Youth Program Volunteer	87%	13%
Classroom Aide or Paraprofessional	69%	31%
Youth Coach	81%	19%
Teacher in Business/Military	79%	21%
College Teaching	78%	22%
School Volunteer	82%	18%

## APPENDIX E

### Retention of ARTC Graduates

COHORT:	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	TOTAL
<b>Employed in DE Public or Charter Secondary School</b>	<b>12</b> (71%)	<b>13</b> (76%)	<b>18</b> (64%)	<b>24</b> (77%)	<b>25</b> (76%)	<b>27</b> (73%)	<b>43</b> (88%)	<b>41</b> (93%)	<b>1</b> (100%)	<b>204</b> (79%)
<b>Resigned for Personal Reasons</b>	<b>5</b> (29%)	<b>3</b> (18%)	<b>8</b> (29%)	<b>5</b> (16%)	<b>7</b> (21%)	<b>10</b> (27%)	<b>5</b> (10%)	<b>2</b> (5%)		<b>45</b> (18%)
<i>to teach in a DE public or charter elementary school</i>	<i>1</i>				<i>1</i>			<i>1</i>		
<i>to teach in a DE private school</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>			
<i>to teach college</i>						<i>1</i>				
<i>to teach in another state</i>	<i>1</i>	<i>2</i>	<i>4</i>		<i>3</i>	<i>4</i>	<i>1</i>			
<i>to enroll in graduate school</i>						<i>1</i>				
<i>for medical reasons; deceased</i>			<i>1</i>	<i>1</i>	<i>1</i>					
<i>to raise a family</i>	<i>2</i>		<i>2</i>	<i>1</i>		<i>1</i>	<i>1</i>			
<i>to return to prior job</i>				<i>2</i>		<i>1</i>	<i>1</i>			
<i>Position eliminated</i>							<i>1</i>			
<i>Unknown reasons</i>					<i>1</i>	<i>1</i>		<i>1</i>		
<b>Not Renewed</b>		<b>1</b> (6%)	<b>2</b> (7%)	<b>2</b> (7%)	<b>1</b> (3%)		<b>1</b> (2%)	<b>1</b> (2%)		<b>8</b> (3%)
<b>TOTAL</b>	<b>17</b> (7%)	<b>17</b> (7%)	<b>28</b> (11%)	<b>31</b> (12%)	<b>33</b> (13%)	<b>37</b> (14%)	<b>49</b> (19%)	<b>44</b> (17%)	<b>1</b> (0%)	<b>257</b> (100%)

## APPENDIX F

### Certification and Tenure Status of ARTC Graduates

#### Certification Status of ARTC Graduates

<b>COHORT:</b>	<b>1997 – 1998</b>	<b>1998 – 1999</b>	<b>1999 – 2000</b>	<b>2000 – 2001</b>	<b>2001 – 2002</b>	<b>2002 – 2003</b>	<b>2003 – 2004</b>	<b>2004-2005</b>	<b>TOTAL</b>
<b>Standard Certificate</b>	16 (100%)	16 (100%)	26 (100%)	27 (93%)	31 (97%)	32 (97%)	41 (84%)	28 (67%)	<b>217</b> <b>(89%)</b>
<b>Emergency</b>				2 (7%)	1 (3%)	1 (3%)	8 (16%)	14 (33%)	<b>26</b> <b>(11%)</b>
<b>TOTAL</b>									<b>243</b> <b>(100%)</b>

#### Tenure Status of ARTC Graduates

<b>COHORT:</b>	<b>1997 – 1998</b>	<b>1998 – 1999</b>	<b>1999 – 2000</b>	<b>2000 – 2001</b>	<b>2001 – 2002</b>	<b>2002 – 2003</b>	<b>2003 – 2004</b>	<b>2004-2005</b>	<b>TOTAL</b>
<b>Already Tenured</b>	12 (86%)	10 (67%)	19 (82%)	19 (76%)	18 (62%)	17 (60%)	15 (34%)	3 (7%)	<b>113</b> <b>(52%)</b>
<b>Not Applicable*</b>	2 (14%)	5 (33%)	2 (9%)	4 (16%)	4 (14%)	1 (4%)	2 (5%)	2 (5%)	<b>22</b> <b>(10%)</b>
<b>Not Yet Eligible</b>			2 (9%)	2 (8%)	7 (24%)	10 (36%)	27 (61%)	36 (88%)	<b>84</b> <b>(38%)</b>
<b>TOTAL</b>									<b>219</b> <b>(100%)</b>

\* employed as school administrator, or in a charter, private, or state school, where tenure is not applicable

## APPENDIX G

### Supervisor Survey Returns and Ratings

#### 2005 Supervisor Survey Returns

COHORT:	2000 – 2001	2001 – 2002	2002 – 2003	2003 - 2004	2004-2005	TOTAL
<b>Completed ARTC Courses</b>	<b>31</b>	<b>33</b>	<b>37</b>	<b>50</b>	<b>44</b>	<b>195</b>
Not Applicable*			1	2	3	<b>6</b>
Not Teaching in a Target School	7	8	11	5	<b>3</b>	<b>34</b>
<b>FINAL SAMPLE</b>	<b>24</b>	<b>25</b>	<b>25</b>	<b>43</b>	<b>38</b>	<b>155</b>

\*eg. completed courses too late for survey; recently employed in new school.

#### Based on Your Experience with Other Teachers at Similar Points in Their Careers, How Would You Compare the Overall Performance of Your ARTC Teacher?

COHORT:	2000 – 2001	2001 – 2002	2002 – 2003	2003 – 2004	2004-2005	TOTAL
5 = Much Better	7 (29%)	10 (40%)	8 (32%)	16 (37%)	6 ( 16%)	<b>47 (30%)</b>
4 = Somewhat Better	6 (25%)	5 (20%)	7 (28%)	9 (21%)	9 ( 24%)	<b>35 (23%)</b>
3 = About the Same	10 (42%)	8 (32%)	10 (40%)	15 (35%)	21 (55%)	<b>64 (42%)</b>
2 = Somewhat Poorer	1 ( 4%)	2 ( 8%)		3 ( %)	2 ( 5%)	<b>8 ( 5%)</b>
1 = Much Poorer						
<b>TOTAL</b>	<b>24 (16%)</b>	<b>25 (16%)</b>	<b>25 (16%)</b>	<b>43 (28%)</b>	<b>38 (24%)</b>	<b>155 (100%)</b>
Mean	3.8	3.9	3.9	3.9	3.5	<b>3.9</b>
Standard Deviation	.93	1.04	.86	1.00	.83	<b>.92</b>

### How Would You Rate This Teacher's . . .

COHORT:	2000 – 2001		2001 – 2002		2002--2003		2003 – 2004		2004-2005		TOTAL	
	N =	24	25	25	25	43	38	154				
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
knowledge of subject matter?	4.21	.78	4.56	.65	4.32	.63	4.49	.63	4.18	.80	<b>4.3</b>	<b>.87</b>
conscientiousness as a teacher?	4.00	.98	4.40	.96	4.36	.81	4.42	.70	4.21	.74	<b>4.3</b>	<b>.73</b>
rapport with students?	4.04	.86	4.20	.91	4.24	.78	4.23	.78	4.00	.87	<b>4.1</b>	<b>.88</b>
use of effective instructional strategies?	3.92	.93	4.12	.83	4.12	.53	4.05	.82	3.79	.84	<b>4.0</b>	<b>.95</b>
ability to engage students in active learning?	3.88	.99	4.12	.83	4.12	.60	4.07	.86	3.82	.93	<b>3.9</b>	<b>.92</b>
management of student behavior & activities?	3.71	1.04	4.12	.97	4.04	.84	4.00	.95	3.71	1.01	<b>3.8</b>	<b>1.07</b>

SCALE: 1 = very weak, 2 = weak, 3 = adequate, 4 = strong, 5 = very strong

### Supervisor Responses: Based on your Experience with this Teacher, How Likely is it that you would Recommend Hiring an ARTC Teacher in the Future?

COHORT:	2000 – 2001	2001 – 2002	2002—2003	2003—2004	2004-2005	TOTAL
very likely	12 (52%)	17 (77%)	17 (71%)	36 (86%)	24 (69%)	106 (72%)
somewhat likely	10 (44%)	5 (13%)	7 (29%)	5 (12%)	10 (29%)	37 (25%)
not at all likely	1 ( 4%)				1 ( 2%)	2 ( %)
Don't know				1 (2%)		1(1%)
<b>TOTAL</b>	<b>23 (15%)</b>	<b>22 (15%)</b>	<b>26 (18%)</b>	<b>42(28%)</b>	<b>35 (24%)</b>	<b>148 (100%)</b>



